GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Road traffic control, PG_00044652		
Field of study	Sterowanie ruchem drogowym		
Date of commencement of studies	October 2022	Academic year of realisation of subject	2025/2026
Education level	first-cycle studies	Subject group	
Mode of study	Full-time studies	Mode of delivery	at the university
Year of study	4	Language of instruction	Polish
Semester of study	7	ECTS credits	4.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Transportation Engineering -> Faculty of Civil and Environmental Engineering -> Wydziały Politechniki Gdańskiej		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Jacek Oskarbski	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	15.0	15.0	0.0	0.0	45

E-learning hours included: 0.0

Learning activity and number of study hours

Learning activity	Participation in didactic classes included in study plan	Participation in consultation hours	Self-study	SUM
Number of study hours	45	10.0	45.0	100

Subject objectives

Acquiring knowledge of traffic control systems for transport, measures and methods for urban traffic control and traffic control on motorways and motorways. Acquiring skills in planning and designing traffic control systems. Acquiring skills in the design of accommodating and adaptive traffic lights and the coordination of traffic lights using modern tools. Acquiring knowledge in the operation of traffic control systems. You will be prepared to cooperate with other branches in the field of traffic signal design.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_W17] has proficiency in transport systems as appropriate for their specialty	Students will be familiar with traffic control measures and methods, and the principles of planning and designing road traffic control systems.	[SW1] Ocena wiedzy faktograficznej [SW3] Ocena wiedzy zawartej w opracowaniu tekstowym i projektowym
[K6_U12] able to select tools and methods, carry out assessments and simple tests of transport systems to an extent required of the specialty / learning profile	Ability to recognise and name traffic control systems for transport. The ability to plan a traffic control system for urban and rural roads. Ability to design accommodative and adaptive traffic signal plans and signal coordination.	[SU1] Ocena realizacji zadania [SU2] Ocena umiejętności analizy informacji [SU3] Ocena umiejętności wykorzystania wiedzy uzyskanej w ramach przedmiotu [SU4] Ocena umiejętności korzystania z metod i narzędzi [SU5] Ocena umiejętności zaprezentowania wyników realizacji zadania

Subject contents

Course content – lecture
Definitions, basics of traffic control systems. Traffic control systems as Intelligent Transport Systems services. Characteristics of traffic control systems. Means and methods of urban traffic control Planning and design of traffic control systems. Design of accommodative and adaptive traffic lights and signal coordination. Traffic signalling and road safety. Traffic control under incident conditions and during mass events. Priorities in traffic control. Driver information systems. Traffic management systems on motorways and motorways. Operation of traffic control systems.

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Passing the laboratory	90.0%	20.0%
Passing the workshops	90.0%	20.0%
Passing the lectures	60.0%	60.0%

Recommended reading	Basic literature	1. Jamroz K. i inni.: Systemy sterowania ruchem ulicznym. WKŁ, 1984 r. 2. Krystek R. i inni: Komputerowe systemy sterowania ruchemulicznymi drogowym. Przykłady zastosowań. WKŁ 19843. Leśko M.,Guzik J.: Sterowanie ruchem drogowym. WPŚ, 2000.4. Gaca S.,Suchorzewski W., Tracz M.: Inżynieria Ruchu Drogowego WKŁ 20085.Tracz M., Allsop R.E.: Skrzyżowania z sygnalizacją świetlną. WKŁ19906.Wrześniowski Z. i inni: Koordynacja sygnalizacji świetlnej. WKŁ19777. Krystek R. i inni: Symulacja ruchu potoku pojazdów WKŁ19808. Krystek R i inni: Węzły drogowe i autostradowe. WKŁ 20089.Michael Kyte, Maria Tribelhorn: Operation, Analysis, and Design ofSignalizedIntersections: A Module for the Introductory Course inTransportationEngineering. 201410. Coleman A. O'Flaherty: TransportPlanning and Traffic Engineering. 1997.11. Peter Guest, Mike Slinn,Paul Matthews: Traffic Engineering Design: Principles and Practice.ElsevierButterworth-Heinemann, 2005.
	Supplementary literature	Czasopisma: Transport Miejski iRegionalny,TrafficEngineering&Control, Przegląd ITS, Autostrady
	eResources addresses	
Example issues/ example questions/ tasks being completed	How does the linear coordination of traffic lights differ from network coordination? What possibilities do we have with network coordination used in urban traffic control systems? State the difference between centralised and decentralised traffic control systems. Characterise one selected traffic control system (SCATS, SCOOT.) How can we manage traffic on interchange sections of motorways and expressways using traffic control systems?What are the purposes of using traffic control systems, make a proposal for the use of a set of systems on a motorway or urban street system. Give the formula for calculating the capacity of an inlet at an intersection with traffic lights. What does saturation intensity depend on How can we prioritise public transport vehicles using a traffic control system? What traffic signal parameters can we optimise using traffic control systems. Characterise these parameters. What are the types of traffic signal systems in terms of the way the programme is implemented and the repeatability of operation. What are the advantages and disadvantages of the different types. How do you assess the validity of the use of signalling at an intersection? Give an example of: a)one group of lanes on an intersection, b) two groups of lanes on an intersection, c) three groups.	
Practical activites within the subject	Not applicable	

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